

### **REMARKS**

Reconsideration and withdrawal of the rejections set forth in the Office Action dated October 24, 2005, is respectfully requested in view of this amendment. By this amendment, claims 1-3 have been cancelled and new claims 6-15 have been inserted. Claims 4-15 are pending in this application, of which claims 4-5 stand withdrawn.

### **Rejections under 35 USC §102**

In the outstanding Office Action, claims 1-3 are rejected under 35 U.S.C. 102(b) as anticipated by Japanese Patent Document JP09-171195 to Hideo et al. (*Hideo*) and further rejected under 35 U.S.C. 102(b) as anticipated by Japanese Patent Document JP2000-193994, to *Takayuki*. Claims 1-2 were rejected under 35 U.S.C. 102(b) as anticipated by Japanese Patent Document JP2002-040482, to Katsumi, et al. (*Katsumi*), and further rejected as anticipated by Japanese Patent Document JP2002-357820, to Fumitoshi et al. (*Fumitoshi*). These rejections, as applied to the new claims, are respectfully traversed.

### **Response**

Applicant's claim 1 defines:

"... A reflective liquid crystal display ... comprising ... reflective pixel electrodes provided for the respective pixels and having first openings therebetween ... first light blocking metal films ... normal metal films formed between the semiconductor substrate and the reflective pixel electrodes ..., each normal metal film being electrically connected to a switching element and a first storage capacitor ... and second light blocking metal films ..., wherein the reflective pixel electrodes and the first light blocking metal films are electrically connected to each other through first via holes; the first light blocking metal films and the normal metal films are electrically connected to each other through second

via holes; and accordingly each reflective pixel electrode is electrically connected to the switching element and the first storage capacitor [and] the second light blocking metal films are electrically connected to the first via holes and cover the second openings of the first light blocking metal films in order to prevent the light which has intruded into the first light blocking metal films side through the first openings from reaching the switching elements through the second openings.

Claim 11 has similar limitations.

Therefore, in addition to the particular light blocking arrangement, since the second light blocking metal films have the same voltage as the storage capacitors, a storage capacitor having larger capacitance can be realized. This capability, which is set forth in the independent claims, is clearly explained in the Specification with reference to FIG. 7B. Specifically, voltage variation of the reflective pixel electrodes based on current leaked by light can be reduced.

Therefore, the invention as claimed sets forth two features:

Claimed Feature A: - The reflective pixel electrodes and first light blocking metal films are electrically connected to each other through first via holes; the first light blocking metal films and normal metal films are electrically connected to each other through second via holes; and accordingly each reflective pixel electrode is electrically connected to a switching element and a first storage capacitor corresponding thereto.

Claimed Feature B:

Claimed Feature B1: - The second light blocking metal films are electrically connected to the first via holes and cover second openings of the first light blocking metal films in order to prevent the light which has intruded into the first light blocking metal films side through the first openings from reaching the switching elements through the second openings.

Claimed Feature B2: - The second light blocking metal films are electrically connected to the second via holes and cover third openings of the normal metal films in

order to prevent the light which has intruded into the first light blocking metal films side through the first openings from reaching the switching elements through the second and third openings.

Additionally, according to the claimed configuration having *Claimed Features A and B1*, since the second light blocking metal films have the same voltage as the storage capacitors (C1), a storage capacitor having larger capacitance can be realized as explained with reference to Fig. 7B. Accordingly, voltage variation of the reflective pixel electrodes based on current leaked by light can be reduced.

*Hideo* is cited as showing a reflective liquid crystal display having a plurality of functional films formed over the switching elements. The reflective liquid crystal display is cited as having an insulating film laid on and under each layer of light blocking metal films arranged so that light penetrates adjacent reflective pixel electrodes through openings formed between adjacent reflective pixel electrodes, but blocked from reaching switching elements. *Hideo* discloses neither *Claimed Feature A* nor *Claimed Feature B1 or B2* as clearly shown in Fig. 10 of *Hideo*.

*Hideo* fails to show or suggest reflective pixel electrodes and first light blocking metal films are electrically connected to each other through first via holes and the first light blocking metal films and normal metal films are electrically connected to each other through second via holes. (*Claimed Feature A*) Therefore, each reflective pixel electrode cannot be electrically connected to a switching element and a corresponding first storage capacitor.

*Hideo* fails to show or suggest *Claimed Feature B1 or B2* in that there is no suggestion that second light blocking metal films are electrically connected to the first via holes and cover second openings of the first light blocking metal films in order to prevent the light which has intruded into the first light blocking metal films side through the first openings from reaching the switching elements through the second openings (*Claimed Feature B1*); or the second light blocking metal films are electrically connected to the second via holes and cover third openings

of the normal metal films in order to prevent the light which has intruded into the first light blocking metal films side through the first openings from reaching the switching elements through the second and third openings (*Claimed Feature B2*).

*Takayuki* is cited as showing a reflective LCD with blocking metal films to block part of read light from reaching switching elements, and light blocking metal film covering openings between adjacent reflective pixel electrodes. *Takayuki* discloses neither *Claimed Feature A* nor *Claimed Feature B1 or B2* as clearly shown in Fig. 1 of *Takayuki*. Specifically, *Takayuki* fails to show or suggest reflective pixel electrodes and first light blocking metal films are electrically connected to each other through first via holes and the first light blocking metal films and normal metal films are electrically connected to each other through second via holes; or that second light blocking metal films are electrically connected to the first via holes and cover second openings of the first light blocking metal films in order to prevent the light which has intruded into the first light blocking metal films side through the first openings from reaching the switching elements through the second openings; or the second light blocking metal films are electrically connected to the second via holes and cover third openings of the normal metal films in order to prevent the light which has intruded into the first light blocking metal films side through the first openings from reaching the switching elements through the second and third openings.

*Katsumi* depicts two light-shielding films 44, 46, found in Fig. 1 of *Katsumi*. *Katsumi* also discloses a similar configuration as in *Claimed Feature A*. In *Katsumi*; however, the second light-shielding film 46 is connected via the reflector 5 and through a via. That connection would be analogous to the first light blocking metal films of the present invention. In contrast with the present invention, the first light-shielding film 44 in *Katsumi* is not electrically connected to the via. This means that *Katsumi* fails to teach or suggest *Claimed Feature B1 or B2*. Additionally, the first light-shielding film 44 in Fig. 9 of *Katsumi* is isolated from the via. Therefore, the first light shielding film is not electrically connected to the via.

*Fumitoshi*. uses two conductive light-shielding films 38, 71, shown in Fig. 10 of *Fumitoshi*. It is respectfully noted that reference numeral 37 pointed out by the Examiner does not indicate a conductive light-shielding film but an insulation film. In contrast, the conductive light-shielding films 38, 71 are separated from a via, as clearly shown in Fig.10. Accordingly, *Fumitoshi* also fails to teach or suggest *Claimed Feature B1 or B2*.

From the foregoing descriptions, Applicant respectfully submits that the new claims 6-15 define over *Hideo.*, *Takayuki*, *Katsumi* and *Fumitoshi.*, taken either alone or in combination.

#### **Applicability of 35 USC §103**

It is noted that the features described above in connection with the *Hideo.*, *Takayuki*, *Katsumi* and *Fumitoshi* references, taken either alone or in combination reference fail to suggest Applicant's claimed arrangement of light blocking film structures. It is submitted that it would be unobvious to modify these references to meet the claim limitations of the present invention.

#### **CONCLUSION**

In light of the foregoing, Applicants submit that the application is in condition for allowance. If the Examiner believes the application is not in condition for allowance, Applicants respectfully request that the Examiner call the undersigned.

**INFORMATION DISCLOSURE**

In compliance with 37 CFR §1.98(3)(ii), applicant forwards herewith machine-translations of the following references, which were applied in the outstanding Office Action:

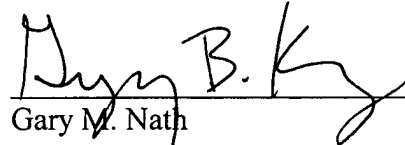
Japanese Patent Document JP09-171195 to Hideo, et al.;

Japanese Patent Document JP2000-193994, to Takayuki;

Japanese Patent Document JP2002-040482, to Katsumi, et al.; and

Japanese Patent Document JP2002-357820, to Fumitoshi, et al.

Respectfully submitted,  
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